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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/480,390	01/11/2000	Michael P. Wagner	1956/126	4259

2101 7590 03/27/2003

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EXAMINER

TO, BAOQUOC N

ART UNIT

PAPER NUMBER

2172

DATE MAILED: 03/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/480,390

Applicant(s)

WAGNER, MICHAEL P.

Examiner

Baoquoc N To

Art Unit

2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-74 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 41-74 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

1. Claims 1-40 are canceled and new claims 41-74 are presented for examination.

Continued Prosecution Application

2. The request filed on 01/16/03 for a RCE under 37 CFR 1.53(d) based on parent Application No. 09/480390 is acceptable and a RCE has been established. An action on the RCE follows.

Response to Arguments

2. Applicant's arguments with respect to claim 41-74 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 41-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bacon (US. Patent No. 6,247,025).

Regarding on claim 41, 51, 58 and 65, Bacon teaches a method for providing mutual exclusion for a resource in a computer system having a plurality of processes, the method comprising:

maintaining a resource lock for each process requiring access to the resource, the resource locking having a plurality of fields requiring initialization in order for the process to access the resource, the plurality of fields including in owner indicator field for indicating an owner process for the resource (col. 5, lines 44-55);

receiving, by a first process, an inquiry from a second process inquiring whether the first process owns the resource (col. 5, lines 61-65);

determining, by the first process, an owner process for the resource other than the first process (col. 6, lines 40-43); and

Bacon does not explicitly teach creating a ghost lock for first process, wherein the ghost lock is a partial instantiation of a resource lock having at least the owner indicator field initialized to indicate the owner process but having less than all fields

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initialized, and wherein the ghost lock is maintained to facilitate future access to the resource by the first process. However, Bacon teaches, "when an object is locked by a particular thread (i.e., the thread has been granted access to the object), the thread identifier is set a value that identifies the particular thread. If there is no other threads are waiting to lock the object, the "Bacon bit" is set to a predetermined value, such as '0', which indicates that no other threads are waiting to lock the object, however, if other threads are waiting to lock the object, the "Bacon bit" is set to a predetermined value, such as '1', which indicates the there is a queue of waiting threads associated with the object" (col. 5, lines 56-65). In addition, Bacon teaches, "note that there is an important special case in which the thread identifier is a single bit which simply indicates whether or not the object is locked. The actual owner of the lock can be stored in some other structure (for instance in thread-local storage), or can be omitted entirely if threads can be trusted to unlock only those objects which they have previously locked" (col. 5, lines 66-67 and col. 6, lines 1-5). This teaches the claimed limitation of the creating a ghost lock for the first process and also the owner of the process. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to include the bacon bit as the indicator field to indicate the owner of the lock in order to provide the locking mechanism to ensure there is an existed owner of the lock for a process.

Regarding on claims 42, 52, 59 and 66, Bacon teaches determining the owner process by the first process step:

determining that the first process is not the owner process (col. 6, lines 40-43);
and

determining the thereby that the second process is the owner process (col. 6, lines (col. 6, lines 62-65).

Regarding on claims 43, 53, and 67, Bacon teaches sending, by the first process, a response to the second process indicating that the first process is not the owner process for the resource (col. 6, lines 62-65); and

creating an owner lock for the second process, wherein the owner lock is a resource locking saving all fields initialized and the owner indicator field indicating that the second process is the owner process for the resource (col. 6, lines 65-67).

Regarding on claims 44 and 68, Bacon teaches determining, by the second process, the owner process for the resource, the owner processing being one of the second process if the second process and a third process (col. 6, lines 51-61); creating a reference lock for the second process if the third process is the owner process for the resource, wherein the owner lock is a resource locking having all fields initialized and the owner indicator field indicating that the second process is the owner process for the resource; and creating a reference lock for the second process if the third process is the owner process for the resource, wherein the reference lock is a resource lock having all fields initialized and the owner indicator field indicating that the third process is the owner process for the resource (col. 6, lines 51-61).

Regarding on claims 45 and 69, Bacon teaches determining the owner process by the second process comprises:

sending, by the second process, an inquiry to the third process inquiring whether the third process owns the resource (other threads) (col. 5, lines 59-65);

receiving, by the second process, a response from the third process indicating whether the third process is the owner process for the resource (col. 6, lines 35-39); and

determining, by the second process, that the second process is the owner process for the resource, if the response indicates that the third process is not the owner process for the resource (col. 6, lines 54-61)

Regarding on claims 46, 69 and 70, Bacon teaches sending, by the second process, an owner notification message to the first process indicating the owner process for the resource, the owner process being one of the second process and the third process (col. 6, lines 10-15).

Regarding on claims 47, 54, 61 and 71, Bacon teaches determining the owner process by the first process comprises:

determining the owner process for the resource based upon the owner notification message (col. 6, lines 35-39).

Regarding on claims 48, 55, 62 and 72, Bacon teaches determining that the first process requires access to the resource;

identifying, by the first process, the owner process for the resource using the ghost lock (col. 7, lines 39-55); and

sending, by the first process, a request message to the owner process requesting access to the resource without first sending an inquiry message to determine the owner process (col. 8, lines 40-44).

Regarding on claims 49, 56, 63 and 73, Bacon teaches identifying the owner process for the resource using the ghost lock comprises:

finding the ghost lock among plurality of resource locks based upon a resource identifier (col. 6, lines 34-39); and obtaining the owner process from the owner indicator field of the ghost lock (col. 6, lines 34-39).

Regarding on claims 50, 57, 74 and 64, Bacon teaches converting the ghost lock to a reference lock by initializing all uninitialized fields of lock (col. 6, lines 51-61).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baoquoc N. To whose telephone number is (703) 305-1949 or via e-mail BaoquocN.To@uspto.gov. The examiner can normally be reached on Monday-Friday: 8:00 AM – 4:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y. Vu can be reached at (703) 305-4393.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231.

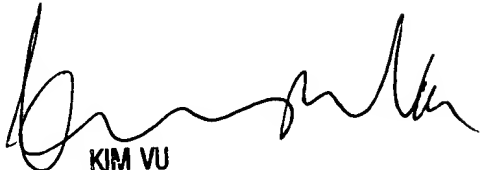
The fax numbers for the organization where this application or proceeding is assigned are as follow:

- (703) 746-7238 [After Final Communication]
- (703) 746-7239 [Official Communication]
- (703) 746-7240 [Non-Official Communication]

Hand-delivered responses should be brought to:

Crystal Park II
2121 Crystal Drive
Arlington, VA 22202
Fourth Floor (Receptionist).

Baoquoc N. To
March 19, 2003


KIM VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100